



Attachment J – Verity Voting 2.0 to 2.3 Voting Modifications

General Features

- Support for additional languages. The following languages are supported: English, Spanish, Chinese, Japanese, Korean, Khmer, Thai, Vietnamese, Tagalog, Ilocano, Hindi (11 total)
- Higher system limits
- Digitally signed reports and exports
- Support for three additional symbols:
 - ¢ (“Cents sign”: ALT + 0 + 162);
 - § (“Section”: ALT + 0 + 167);
 - ° (“Degree sign”: ALT + 0 + 176)
- Support for dependent contests
- Support vote capture and recording for contests tagged as fractional cumulative. Tabulation is completed manually by using the CVR export or report from the Count Auditing Dashboard.
- Support for 8.5” x 20” ballots
- Increased physical security with a serialized security seal that fully secures the Smart Panel CFast door compartment on devices and on all workstation chassis.

Pennsylvania-specific features

- Support Cross-filing
- Support Pennsylvania method for electronic interface voting with straight party
- Support Pennsylvania preferences for electronic ballot displays, esp. with many choices in a single contest

Oregon-specific features

- Support “No Party Preference (NPP)” ballot styles for modified closed primaries

Indiana-specific features

- Straight party overvote invalidates partisan contests
- Retrieval codes can be inserted into Cast Vote Records, to support retrieval of Early Voting ballots, if necessary.

Ohio-specific features

- Support multiple write-in lines associated with a single target area for choices in a contest (e.g., Governor/Lieutenant Governor)

Features for Verity Touch Writer series

- Verity Touch Writer Duo
 - Support for Verity Controller management and daisy-chain configuration.
 - Additional ballot template: summary layout
 - Alternative to attached laser printer: integrated thermal printer



- Standalone Verity Touch Writer
 - Removal of Access Codes
 - Enter Access code screen is removed
 - Deactivate Code screen is removed
 - Poll worker screen to “Confirm Access Code” screen (ballot style, etc.) is renamed “Confirm Selections”
 - Poll worker screen to “Create ballot access code” is renamed “Activate ballot”
 - “Access Code Summary Report” is renamed “Ballot Marking Session Report”
 - In all log entries, the term “Access Code” is replaced with “Session ID”
 - Support for AutoBallot (previously available on Verity Print and Verity Controller)
- Software alternative for Poll Worker button on rear of device (touch “Ready to Use,” on the idle screen)
- Support for customized instructions at the end of voting session, to include references to casting the ballot at Verity Scan, or anything else specific to the polling place that the jurisdiction may wish to mention; customized instruction is entered in user-defined preferences in Data (Preferred Wording)
- Support users’ ability to set time zone
- Screens indicate if devices do not have AC power (“Batteries last a limited time only”)
 - Displayed on Power On Self-Test (POST) screen, or during normal operations
 - Does not interrupt a voting session
- “Battery low” warning is displayed when AC power is disconnected, and battery is critically low
 - Prevents further action until AC power is restored
 - Recoverable when AC power is applied; reboot is no longer required unless the battery is below 5% alert threshold.
- System displays a system alert if the available space on the vDrive is 50 MB or less
- After polls are suspended or closed (applies to Verity Controller, Verity Scan, Verity Touch Writer, and Verity Touch Writer Duo), screen alerts users to re-dock and power down device if they attempt to store a tablet that has not been powered down
- Now feature a metal serialized security seal that fully secures the Smart Panel CFast door compartment.
- Enhancements to idle screens
 - Identifies what the device is
 - Indicates “Ready for use,” in English, for poll workers
 - Displays voter instructions in same languages as the election



- Warning is displayed if a voter attempts to deselect a write-in name previously entered
- Warning is displayed if voter makes substitution in <n of m> contest
 - If all selections are made, and if the voter selects an additional choice, the screen indicates which selection is being removed, and which selection is being added
- Voting session idle timeout
 - If the idle timer on an electronic ballot reaches 5 minutes, the device asks, “Are you still voting?”
 - If the voter responds within 45 seconds, it returns to voting and restarts the timer (the timer changes in real-time)
 - If the voter does not respond within 45 seconds, the device goes to a “Session Locked” voter screen, and the poll worker can either unlock the screen, or spoil the ballot. The poll worker must enter the poll worker passcode, and then it goes to the “Session Locked” poll worker screen to unlock or spoil
 - Enable/disable in Verity Build
- Optional orientation wizard, with guidance for audio and screen settings, and additional voter instructions.

Features for Verity Scan

- Second-chance voting check for marginal marks
- Second-chance voting check for blank page (in addition to existing check for blank sheet)
- Support for scanning summary vote records
- If a user elects to save ballot images (based on Build settings), when saving the image on the vDrive, in PNG format, the image filename includes the GUID that links to the GUID in the CVR (this is to provide support for RLAs)
- Support users’ ability to set time zone
- Screens indicate if devices do not have AC power (“Batteries last a limited time only”)
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 - Does not interrupt a voting session
- “Battery low” warning is displayed when AC power is disconnected, and battery is critically low
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dock and power down device if they attempt to store a tablet that has not been powered down

- Now feature a metal serialized security seal that fully secures the Smart Panel CFAST door compartment.
- Enhancements to idle screens
 - Identifies what the device is
 - Indicates “Ready for use,” in English, for poll workers
 - Displays voter instructions in same languages as the election

Features for Verity Controller

- Dashboard icons indicate power and battery status of all connected units
- Dashboard icons indicate when a ballot has been cast on a connected Touch DRE unit
- Support for Touch Writer Duo BMD
- Support users’ ability to set time zone
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 - Does not interrupt a voting session
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- Now feature a metal serialized security seal that fully secures the Smart Panel CFAST door compartment.

Verity Touch

- Warning is displayed if a voter attempts to deselect a write-in name previously entered
- Warning is displayed if voter makes substitution in <n of m> contest



- If all selections are made, and if the voter selects an additional choice, the screen indicates which selection is being removed, and which selection is being added
- Voting session idle timeout
 - If the idle timer on an electronic ballot reaches 5 minutes, the device asks, “Are you still voting?”
 - If the voter responds within 45 seconds, it returns to voting and restarts the timer (the timer changes in real-time)
 - If the voter does not respond within 45 seconds, the device goes to a “Session Locked” voter screen, and the poll worker can either unlock the screen, or spoil the ballot. The poll worker must enter the poll worker passcode, and then it goes to the “Session Locked” poll worker screen to unlock or spoil
 - Enable/disable in Verity Build
- Optional orientation wizard, with guidance for audio and screen settings, and additional voter instructions.

Verity User Management

- Role-Based Access Control (RBAC)
 - Allow user to create & delete custom roles & assign or remove permissions
- Configurable password options
 - Require password changes to be different than the last <n> previous passwords
 - Minimum password length is configurable
 - Require that passwords not contain the username
- For each user listed, adds a field indicating whether the user is currently logged in (yes/no)

Verity Desktop

- Support for setting time zone

Features for Verity Data

- Add fields for preferred wording:
 - Define custom wording for “This page left blank” (40 char limit)
 - Define custom wording for “Read both sides” on paper ballots (40 char limit)
 - Define custom instructions for ballot marking device paper handling
- Add “Notes” field for Additional Text



- Add “Notes” field for Ballot Order Screen
- Additional Text screen allows user to associate one or more parties to each Additional Text in an Open Primary
- For Rotation, add confirmation if “Generate Indices” button is selected, as selecting the button will overwrite any existing indices that have already been entered.
- Warning message added if a user validates a language, and then attempts to navigate away from the screen before locking the language
- Validation to ensure that every precinct is assigned to at least one polling place
- Validation to ensure that every polling place has at least one precinct assigned to it
- Support for multiple paper sizes in a single election: allow up to two different ballot size templates: one 8.5" wide template for in Central or in-person scanning on Verity Scan, and option to add 11"x17" for Central only
- Support for condensed format summary vote records: short election title; short jurisdiction name; short contest title; custom header; title; English & bilingual portrait and landscape templates; preview layout
- Staging features
 - Generate English-only paper ballots before entering any translations or audio for election data
 - Accommodate selective edits to certain ballot styles without having to reprint all ballots in the election; includes Version Compatibility Report
- WMA audio format in Data/Build.
- Audit log reports are digitally-signed
- All PC workstation chassis now feature a metal serialized security seal that fully secures the chassis from physical access to interior components

Features for Verity Build

- Elimination of pre-determined vDrive IDs in Verity Build, to allow batch writing of vDrives with vDrive duplicator
- Validation to ensure that every precinct is assigned to at least one polling place
- Validation to ensure that every polling place has at least one precinct assigned to it
- Support for multiple paper sizes in a single election: allow up to two different ballot size templates: one 8.5" wide template for in Central or in-person scanning on Verity Scan, and option to add 11"x17" for Central only



- Device settings:
 - Allow/reject “Blank page” on Scan (as distinct from “Blank ballot”)
 - Allow/reject “Marginal mark” on Scan
 - Voter idle timeout feature – enable/disable
 - Default voting session volume setting for accessible devices
 - Enable/disable human-readable unique ID for Touch Writer Duo
- Read vDrives screen:
 - Removes vDrive ID
 - Adds Device Type, Polling Place, and Election Version
- Print queue import includes field to define the Starting Ballot Number for each row in the import (can be used to support integration with third-party systems, including remote accessible vote- by-mail)
- Ballot Style Report includes the same ballot style numbers as shown on the ballot preview window
- Data validation window displays a “Start Validation” button, rather than automatically starting the validation when entering the workspace
- Modified barcode format for ballot unique IDs (human-readable unique IDs are shorter than barcode versions)
- The device password for Verity Key is now required to be 8-10 alphanumeric characters (0-9, Uppercase A-Z).
- Staging features
 - Generate English-only paper ballots before entering any translations or audio for election data
 - Accommodate selective edits to certain ballot styles without having to reprint all ballots in the election; includes Version Compatibility Report
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Features for Verity Central

- Support for scanning 8.5” wide and 11”x17” ballots in the same election



- Allow administrators to set conditions that will be automatically accepted in all batches during the scanning process (e.g. accept all undervotes during scanning, in lieu of manual review and adjudication)
- Allow administrators to control/limit the conditions included in “Accept” feature, for all users (i.e. ability to place limitations on adjudicators’ ability to accept undervotes, overvotes, etc.)
- Support adjudicators’ ability to accept (i.e. auto–resolve) specific types of conditions by batch, on a selective basis (e.g., for selected batches, accept all undervotes)
- If a user selects "Accept" for one or more entire batches, Verity Central prompts the user with a confirmation message
- If a user selects "Revert" for one or more entire batches, Verity Central prompts the user with a confirmation message
- Allow users to adjudicate damaged contests, where an option box is unrecognizable, through the Ballot Review window (instead of requiring users to locate the rejected ballot during scanning)
- In the Ballot Review window, add button to Accept page (without additional keystrokes required for “Actions” button)
- In the Ballot Review window, "Previous" and "Next" buttons will take users to the previous or next unresolved contest
- UI wording changes to clarify the Boolean and–or relationship of how combinations of filters will work
- Filter for specific marked contest choices
- Import/export certified write–in names (in same format as Verity Count import/export)
- Precinct Summary Report
- Batch Summary Report
- Batch Summary by Precinct Report
- Scanned Batch report includes Batch Notes
- Increase character limits in Batch Notes field to 500
- vDrive Recovery Screen indicates batches included on original vDrive
- Features to support risk-limiting audits (RLAs)
 - In Central, when a CVR is written to vDrive, the GUID used in the CVR filename is associated with the ballot in Central



- In Central's Scanned Ballot Information Export, there is now a column for the GUID
- In Central's Ballot Review window, for any image, the GUID for the ballot sheet is displayed on the left-hand side of the screen, along with Batch and Sequence information.
- In Central, exported ballot images default to a naming convention that includes page number and GUID
- In Central, provide the capability to search for a specific ballot (i.e. its images) by GUID.
- Verity Count tracks CVRs by GUID
- Audit log reports are digitally-signed
- All PC workstation chassis now feature a metal serialized security seal that fully secures the chassis from physical access to interior components

Features for Verity Count

- Remove "of Y" vDrives from the vDrives Tabulated graph in the Dashboard
- Remove percentage of vDrives Tabulated from the graph in the Dashboard
- Support "freeform write-in resolution," so that users can enter additional write-in candidate names without leaving the write-in assignment interface.
- Option to sign data exports and reports (and include the public key information as part of each export).
 - Note: if this option is disabled, Count will still sign audit log reports.
- Option to include turnout boxes for each contest on Cumulative Report
- Option to include turnout subtotals in each precinct on the Precinct Results Report
- Percentages removed from residual vote sections (Overvotes, Undervotes, Invalid Votes) on Cumulative and Precinct Reports
- Filters
 - For choices, include/exclude write-ins
 - Filter by "Included Provisionals," or "Non-Provisionals"
- Import/export certified write-in names. Export is through the Detailed Vote Totals report.
- Export the status of the provisional ballots in the currently open Task.
- Import provisional ballot status for ballots in the currently open Task
- Option to show/hide sheet count totals in report headers that include results from paper ballots
- District Results report
- Support import of additional district definitions
- Support for Calvoter import/export
- When reading vDrives, the display:



- Removes vDrive ID
- Adds Device ID and associated polling place (or Verity Central)
- In CVR reports, the GUID for each CVR is now in the header of the report.
- Audit log reports are digitally-signed
- All PC workstation chassis now feature a metal serialized security seal that fully secures the chassis from physical access to interior components

Corrected Defects

The following defect found in Verity 2.0 has been corrected in the Verity Voting 2.3 modification

Product	Description of Verity Voting 2.0 Defect	Resolution/Results In Verity Voting 2.3
Verity Count	Different messages seen for vDrives from Verity Central and Verity Scan, when rejection reason is 'vDrive has already been counted'	Corrected. Message from Verity Count has been aligned for consistency.

Updated System Limits¹

Element	Limit	Comments
Precincts	3,000	Increased from 2,000
Splits per precinct	20	Unchanged
Total precincts + splits in an election	3,000	Increased from 2,000
Districts for voting devices and applications	400	Up from 75
Parties in a General Election	24	Unchanged
Parties in a Primary Election	10	Unchanged
Contests in an election	2,000	Increased from 200
Total contest choices (voting positions) in an election	5,000	Increased from 600
Maximum length of choice name	100 characters	Unchanged
Choices in a single contest	300	Up from 75
Maximum write-in length	25 characters	Unchanged
Ballot styles	N/A	Unchanged
Voting types	5	Unchanged
Maximum polling places per election	3,050	Increased from 1200
Maximum devices per election	N/A	Unchanged
Maximum number of central count scanners in a single network	4	Unchanged



vDrive capacity – Scan voting device	9,999 sheets per vDrive	Unchanged
vDrive capacity – Verity Central	80,000 sheets per vDrive	Unchanged
Number of voters definable per election	2,500,000	Increased from 1,000,000
Number of total ballots cast per election	1,750,000	Increased from 1,000,000
Maximum number of sheets per ballot	4 sheets	Unchanged
Maximum number of sheets – Verity Scan	9,999	Unchanged
Maximum number of CVRs – Verity Count	7,000,000 CVRs	4,000,000 CVRs
Ballot sizes	8.5x11, 8.5x14, 8.5x17, 8.5x20, 11x17 (Central only)	Addition of 8.5x20
Number of languages in a single election (including English)	11	Increased from 2

¹ Verity Voting 2.3 system limits are applicable to all HP Z240 workstations with 64 GB memory deployments, except for the combined Data/Build/Count deployment. Verity Voting 2.3 also supports upgrades to the previous generation HP Z230 workstations with 32 GB memory, at system limits documented for Verity Voting 2.0.